

REMARKS

Claims 21 and 24 have been rejected under 35 U.S.C. § 112, second paragraph. Claims 20-34 have been rejected under 35 U.S.C. § 103(a). Claim 20 has also been rejected under 35 U.S.C. § 102(b).

Claim 20 is hereby amended. The phrase "a sizing agent comprising a water-soluble polysaccharide solution and a cationic polymer" has been changed to "a sizing agent consisting essentially of a water-soluble soybean polysaccharide solution and a cationic polymer." Support for the amendment can be found, for example, at page 3, lines 8-14.

Claim 24 is also hereby amended. The second recitation of "acrylic polymer" has been changed to "allyl polymer." Support for the amendment can be found, for example, at page 7, lines 24-27.

Claims 21, 28 and 30 are hereby canceled.

Upon entry of the above amendment, Claims 20, 22-27, 29 and 31-34 will be all the claims pending in the application. Claims 21, 28 and 30 have been cancelled.

I. Claim Rejections under 35 U.S.C. § 112

The Examiner has rejected Claims 21 and 24 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 has been canceled.

Claim 24 has been amended to change the second appearance of the term "acrylic" to "allylic."

Therefore, Applicants respectfully request that the rejection under § 112, second paragraph, be withdrawn.

II. Claim Rejections - 35 U.S.C. §§ 102/103

The Examiner has rejected Claims 20 and 24-34 under 35 U.S.C. § 103 as allegedly being unpatentable over U.S. Patent No. 4,908,240 to Auhorn et al. ("Auhorn").

The Examiner has also rejected Claims 21-23 under 35 U.S.C. § 103(a) as being unpatentable over Auhorn as applied to claim 20 above, and further in view of U.S. Patent No. 6,171,381 to Yoshimura et al. ("Yoshimura") and JP 11-279203 ("JP '203").

The Examiner has further rejected Claim 20 under 35 U.S.C. § 102(b) as allegedly being anticipated by Auhorn.

a. Rejection of Claims 20 and 24-34 under 35 U.S.C. § 103

Auhorn is cited as disclosing an aqueous coating agent for paper consisting of (a) pigment, (b) a cationic polymer dispersion and (c) a surfactant. It is asserted that Auhorn teaches using water-soluble polysaccharides in admixture with cationic polymer by replacing a part of the cationic polymer.

Applicants assert that amended Claim 20 is not taught or suggested by Auhorn.

The present invention is distinguished from the teachings of Auhorn because the present invention recites the use of a sizing agent consisting essentially of a water-soluble soybean polysaccharide and a cationic polymer. See page 3, lines 9-14, and page 12, lines 11-14 and 23-28.

Conversely, Auhorn discloses applying an aqueous coating agent consisting of pigments and binders to one or both surfaces of the paper. The coating agent is a mixture of (a) a finely

divided pigment, (b) a cationic aqueous polymer and (c) a surfactant, which interferes with the formation of the surface size and/or a polymeric dispersant. Up to 5-30% by weight of the polymer of component (b) or of a mixture of polymers of component (b) are replaced by one or more of water soluble polysaccharides, such as water soluble starch, CMC, methyl cellulose, hydroxyethylcellulose and galactomannes. *See* column 1, line 67, to column 2, line 14; column 7, lines 19-29.

Thus, Auhorn fails to teach or suggest the use a sizing agent "consisting essentially of" water-soluble soybean polysaccharides, and, therefore, a person having skilled in the art to which the subject matter of Auhorn relates would not be motivated to arrive at the invention recited in amended Claim 1.

In view of the above, Applicants respectfully request that the rejection of Claims 20 and 24-34 be withdrawn.

b. Rejection of Claims 21-23 under 35 U.S.C. § 103

Yoshimura is cited as disclosing the use of soy polysaccharides or soy polysaccharide derivatives in a coating composition such as an ink composition. It is alleged that it would have been obvious to use the coating agent of Auhorn and the soy polysaccharide of Yoshimura (prepared by the desalination process of JP '203) in order to enhance the stability of density of development of color.

Applicants note that Claim 21 has been canceled. With regard to the rejection of Claims 22 and 23, Applicants respectfully traverse. Please note Claims 22 and 23 require that the cationic polymer is fixed to the water-soluble soybean polysaccharide.

As stated above, Auhorn clearly does not teach or suggest a sizing agent consisting essentially of a water-soluble soybean polysaccharide and a cationic polymer.

Yoshimura discloses an aqueous metallic ink composition comprising at least a metallic powder pigment, a colorant, water and a water-soluble organic solvent. The composition of Yoshimura may further include both a natural polysaccharide and a water-soluble soy polysaccharide or a water-soluble polysaccharide derivative, whereby the stability of the density of the color development is increased and the change of the viscosity of the ink after storage is restrained or prevented. *See* col. 3, lines 48-61.

Further, Yoshimura teaches that a water-soluble soy polysaccharide or water-soluble soy polysaccharide derivative is used in place of either cellulose derivatives such as either methyl cellulose, CMC, etc., or cyclodextrin/cyclodextrin derivatives, both having hydroxyl groups, with a natural polysaccharide. *See* column 2, line 64, to column 3, line 11; column 3, line 46, to column 4, line 19; column 5, lines 40-54; and column 6, lines 15-34. The natural polysaccharide in Yoshimura controls the color development in the aqueous ink composition. Unlike the presently claimed invention, the water-soluble soy polysaccharide or water-soluble polysaccharides derivative of Yoshimura must be used with natural polysaccharides to achieve the desired effect.

JP '203 discloses a method for producing a water-soluble polysaccharide by carrying out desalinating purification of the water-soluble polysaccharide extracted from a soybean or a treated soybean material in an acidic range. However, JP '203 does not teach using the water-soluble polysaccharide for coating or sizing paper.

Thus, Applicants assert that one having ordinary skill in the art would not be motivated by the teachings of Auhorn, Yoshimura and JP '203 to arrive at the invention recited in pending Claims 22 and 23. Thus, the combination of Auhorn, Yoshimura and JP '203 cannot teach the recitations of Claims 22 and 23.

c. Rejection of Claim 20 under 35 U.S.C. § 102(b)

It is alleged that that the disclosure of Auhorn proves that Claim 20 lacks novelty.

Applicants respectfully traverse.

Amended Claim 20 recites a sizing agent consisting essentially of a water-soluble soybean polysaccharide and a cationic polymer. As discussed in the above sections, such a sizing agent is not disclosed in the teachings of Auhorn. Thus, Applicants respectfully request that the anticipation rejection be withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. 09/725,040

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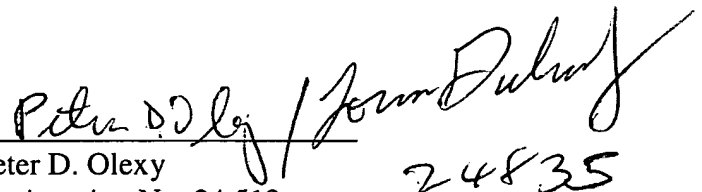
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